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GUIDE TO SUCCESSFUL SQUAB RAISING



BY
MILTON O. JONES

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GUIDE TO S U C C E S S F U L S Q U A B R A I S I N G

BY
MILTON O. JONES

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INTRODUCTORY

Owing to the large number of inquiries from visitors and correspondents for more detailed information on squab raising, I have decided to place before such as are interested this book, in which I have endeavored to set forth fully and clearly what I have learned by study and experience to be facts. The principal shortcoming of the majority of books which have already appeared on this subject seems to be the fact that they fail to lay sufficient stress on the more important subjects, and, lacking definite information, often leave the reader in doubt as to just what is meant. Of course, it is utterly impossible, in a book of this scope, to describe in minute detail every process involved, but all description of methods of procedure have been outlined with due regard to the fact that no two persons do the same thing in exactly the same way; and for this reason more pains have been taken to show what to do rather than just how to do it.

In my opinion, any person who does not shun work and who has an eye for the beauties of nature as well will certainly make a success of a business which combines so much pleasure with profit. There seems to be a very popular but erroneous belief that squab raising is a business which will take care of itself. The beginner should realize, however, that it requires as constant and systematic attention as does any other legitimate occupation.

The true pigeon raiser does not treat his flock as he would a machine, throwing down a certain quantity of feed and calculating just how many squabs will be produced within a given time. He learns to know his birds, to be in sympathy with them, to afford them all possible necessities, and thus keeps his business on a paying basis, not by cutting down necessary expenses but by managing economically and turning his products to the best advantage.

The purpose of this book is not to demonstrate the pecuniary possibilities attached to squab raising, for into this matter the personal equation enters largely. It is sufficient to point to the large number of pigeon and squab farms in existence to prove that the business can be carried on successfully. It is intended primarily as a guide for the experienced breeder as well as the inexperienced beginner, and it is sincerely hoped that it will be found of value to both.

Respectfully,

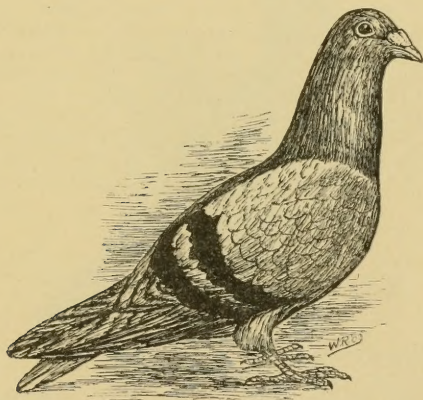
MILTON O. JONES.

Bergenfield, N. J., April, 1909.

SUCCESSFUL SQUAB RAISING

THE HOMER

The pigeon which has excited the most wide-spread interest and won the greatest favor among both pigeon fanciers and squab raisers, as a whole, is undoubtedly the thoroughbred Homer. Its wonderful powers of sagacity, swiftness and endurance which have earned celebrity for it under the name of the Flying Homer, have united with its



Blue-Barred Homer

other excellent qualities to make the best and most efficient squab-breeding pigeon.

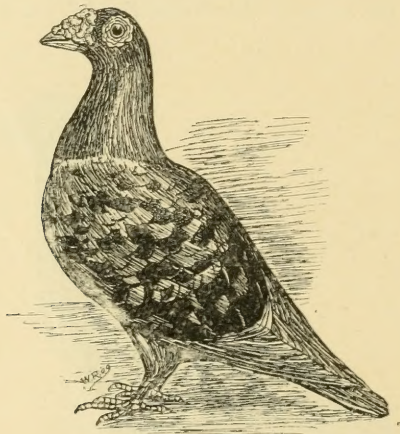
It is large, sturdy, and compactly built, and it submits readily to confinement. Its breadth of shoulder, close-fitting wings, erect head

and watchful eye suggest the abundance of latent energy which it possesses. Above all, it is a prolific breeder, producing a squab not abnormal in size, but a white-skinned, average-weight variety which finds a ready market anywhere.

A flock of well-bred Homers can be safely expected to produce an average of eleven to twelve squabs a year per pair. Last year, the author's 700 mated pairs raised 8,450 squabs for market.

THE DRAGOON

I mention this variety because it has been associated for a long time with the Homer and is now found in the majority of lofts in this country, crossed in varying proportions with it. The Dragoon is one of the handsomest birds of the pigeon tribe, and is greatly esteemed



Blue-Checkered Dragoon

by some squab raisers. It is usually a little larger than the Homer and produces a larger squab. It is, however, not so prolific a breeder and its squabs require about five weeks to mature, while those of a straight Homer mature in four weeks.

The Dragoon, properly crossed with a Homer will usually produce a larger squab in about the same length of time as would a straight Homer; and the presence of Dragoon blood in a flock of Homing pigeons is to be considered more advantageous than detrimental.

HOW TO BEGIN

MATED BIRDS.—The majority of those who engage in the squab business invite trouble by the way they begin. The tendency of novices seems to be to buy a flock of birds at random because they are cheap, without knowing whether they are mated, healthy or worked out, or even suitable for breeding purposes. Then, if, after several months of patient waiting, the owner does not realize the expected fortune, he disposes of the flock at a loss and ever after condemns the business. The successful squab raiser has to make a study of his occupation just as he would if he were the proprietor or manager of any other legitimate business. The man who takes up squab raising in order to avoid work had better stay out of it.

Few persons not acquainted with the breeding of pigeons understand fully just what is meant by the term "mated." When used in reference to pigeons, "mated" signifies "married." A mated pair consists of a cock and a hen which have married and are producing squabs. The term "pair" is used more commonly and means nothing. For example, a man has one hundred odd pigeons to sell; he calls them fifty pairs, but, for all the buyer knows, they may all be cocks. The prospective purchaser should remember that well-bred, healthy, mated birds cannot be procured at a low figure, while "pairs" of pigeons can be bought almost anywhere for a song.

Unless he knows what he is about, the beginner should purchase his stock of a dealer who makes a business of pigeon raising and who is willing to guarantee his matings and to give a list of the pairs which he furnishes. The number of birds he buys should be commensurate with his experience, but the writer believes that he should start with not more than twenty-five pairs of mated pigeons and increase his flock only after he has gained enough experience to give them the requisite care and attention.

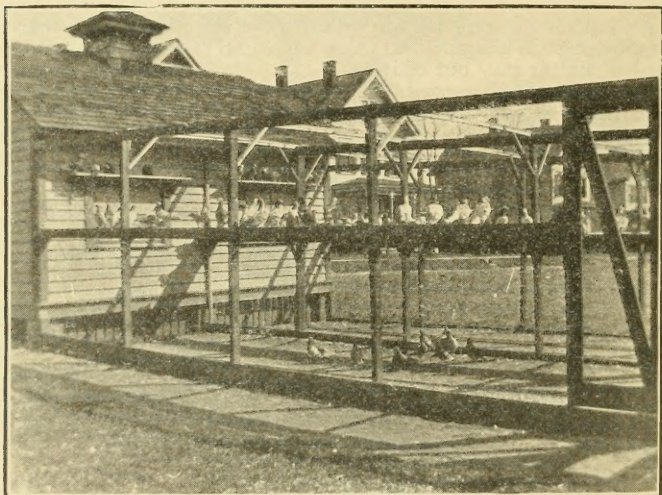
SITE AND BUILDINGS

As a rule, it is an advantage to the pigeon raiser to have his farm located within easy traveling distance of a large city or the place where he expects to market his squabs. In choosing the site and erecting the pigeon loft, the following general principles should be observed:

Select dry, well-drained ground with a southern exposure. On no account locate the house on low ground or where the spot is shaded sufficiently to make it damp. If possible, face the building toward the south, or at least in such a direction that the interior as well as the flying-yard gets the direct sunlight the greater part of the day. Raise the building about a foot from the ground on brick piers to prevent dampness and to guard against the inroads of rats and mice.

Build the loft in such a manner that a good system of ventilation may be secured without causing draughts.

Some successful pigeon raisers prefer to build their lofts separately in what is known as the colony style. There is a great deal to be said in favor of this method, but the chief objection to it is that the use of colony houses increases the work of feeding and cleaning, especially in winter, besides taking up more space and costing much more to build for the same number of birds than if the pens are all under one roof.



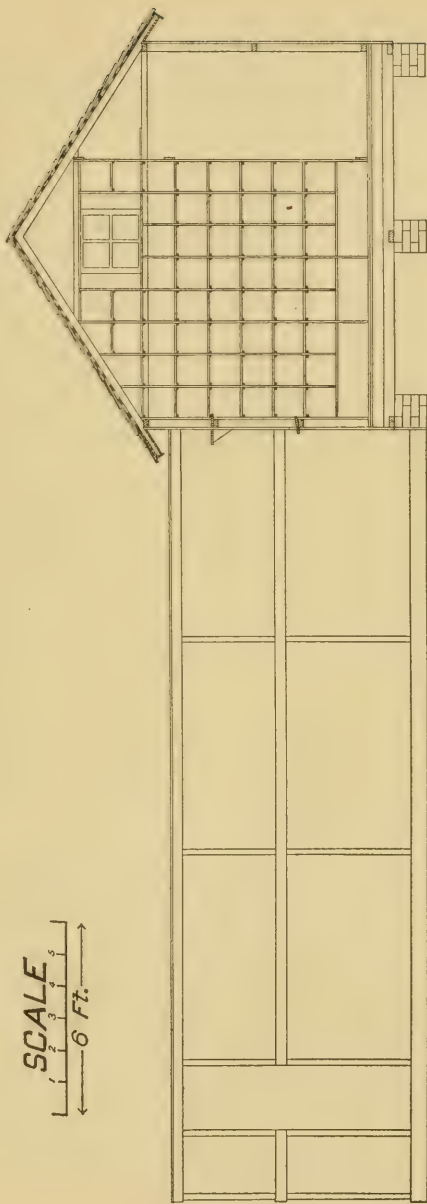
A two-pen colony house and flying yards

CAPACITY.—Experience demonstrates that the best results are obtained when not more than fifty pairs are kept together in one pen, and that such a pen should contain at least 72 square feet of floor space.

PLAN.—The plan favored by the author (see page 9) provides for a house 12 feet wide, 11 feet high from foundation posts to ridge-pole, and may be of any length suitable for dividing into pens 8 feet wide. This plan also has the advantage of being so simple and uniform in construction that it can easily be added to from time to time. The front of the house faces the south. The plan allows for a passageway 3 feet wide along the north side, separated from the pens by inch-mesh wire netting, and communicating with them by doors hung with



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PLAN AND SIDE ELEVATION OF AN IDEAL SQUAB HOUSE AND FLY

spring hinges to prevent the possibility of their being left open. Where the climate is cold in winter the floors should be double and the north wall double-lined.

NEST-BOXES.—The nest-boxes are built against the partitions between adjoining pens. It is best to use $\frac{7}{8}$ inch material in their construction as thinner boards are likely to warp. Each nesting space is 12 inches wide, 12 inches high and 12 inches deep. The floors of the nests are made to rest on cleats so that they may be readily removed during the process of cleaning.

Enough nest-boxes should be provided to allow two boxes for each pair of breeders and to leave about a dozen extra ones over. A pair of birds, after choosing their nests, will continue to use the same ones for years unless driven out by another pair of house hunters. In this way much unnecessary loss both of eggs and squabs will be occasioned unless there are enough empty nest-boxes to give the birds their choice. Since the pen described above is designed to accommodate fifty pairs of mated pigeons, the number of boxes required would be about 112.

The use of a glazed earthenware nesting-dish, or "nappy," 9 inches in diameter across the top, is strongly advised. These rest solidly on the floors of the nest-boxes and serve to hold the nests together as well as to keep the eggs and squabs from rolling out. Earthenware nappies are far superior to the wooden ones, for besides being more sanitary and serviceable, they are more easily handled and cleaned, since the wooden bowls have to be fastened to the floors of the nests to give them the necessary stability.

LIGHT AND VENTILATION.—Plenty of light and ventilation is imperative. One of the causes of damp, sweating walls and floors in winter is insufficient circulation of air. It must be remembered, however, that a draught is as bad as no ventilation at all, and either will give the birds roup or cold in the head, besides sowing the seed for canker and other diseases.

A good system of ventilation may be obtained by cutting a hole in each gable of the house about 2 feet square and fitting them with sliding window sashes. An opening covered with wire netting should then be left in the partition between each pen in line with those in the gables.

For the double purpose of light and additional ventilation, there should be two sliding sashes in the south side of each pen, and, in a long house, one opposite every second partition on the north side of the house.

I have found this arrangement to be very satisfactory, and with ordinary care a free circulation of air can be maintained in almost any weather without exposing the birds to draughts. In the case of an exceptionally long house, it may be necessary to put additional ventilators in the roof to carry out foul air.

As a protection against storms, the openings in the gables may be fitted with louver windows outside of the sliding sashes, which may be kept open all winter by employing the simple expedient of tacking heavy cheese-cloth over them.

The exit holes are two in number and are located above the south windows under the eaves. These should be 6 inches high and 6 inches wide, and should be furnished with a 6-inch lighting board inside and outside. Slides may be fitted to these pigeon holes so that the birds may be confined either indoors or out in the fly in order to catch them; but, with this exception, they should be left open all year around.

OTHER REQUIREMENTS.—A new house should receive a thorough coating of carbolated whitewash on the inside several days before the birds are to be placed in it. This subject will be treated at greater length under Whitewashing.

Each coop should be provided with a two-gallon, galvanized-iron drinking-fountain, so constructed that it can be easily cleaned. Banty Drinking Fountains will be found to answer this purpose very satisfactorily. These are made with the bottoms removable so that the interior can be readily swabbed out. They may be obtained at any poultry supply house at about \$1.25 each.

Another useful, although not absolutely necessary, addition to the furnishings of a pen is a galvanized iron, sectional grit-box, designed to hold three different articles; for example, oyster shells, charcoal and pigeon grit. Salt should never be kept in this or any other metal box. These boxes cost about 50 cents each.

THE FLY

SIZE.—Ample room should be provided for the pigeons to exercise in, but lack of space and the expense of building a large fly and keeping it in condition limit its extent, while the advantage of a low cage is self-evident, since all the catching and transferring of birds ought to be confined as far as possible to it.

Several prominent pigeon raisers, I believe, advocate the use of a flying-yard reaching as high as the ridgepole of the house, thus allowing the birds to sun themselves on the southern slope of the roof. I have tried this plan, and, though it may look very nice as a theory, all I can say about it is that I condemn its use absolutely in practical squab raising. My experience has shown that the pigeons will squat on the roof for hours together and actually grow fat and lazy, instead of going to nest and tending their squabs properly. Besides, the breeder will find that the birds, when out in the fly, can easily keep out of his reach, and that he is almost as helpless in the control of his flock as if they were allowed to fly at large.

On the other hand, in a low fly, the birds soon become accustomed to the proximity of the caretaker, and it is no trouble to catch them with the aid of an ordinary crab net.

Having taken all these things into consideration, I have concluded that the most convenient height of the flying-yard is about 8 feet. The length ought to be at least 25 feet—30 feet would be better—and the width would be 8 feet, or the same as the width of the coop.

Use 2"x3" spruce posts for the framework of the fly and 1"x2" furring strips for supporting the overhead netting, unless the span is more than 8 feet; then it will be found necessary to use heavier material. The upright posts should be erected 6 feet apart, not with one end in the ground, but only staked to the ground. This prevents



View of a five-pen house and flying yards

the posts from rotting; and the stakes may be easily replaced when decayed. Two strips of inch-mesh wire—one 4 feet wide and the other 3 feet wide—can be used to cover the sides and ends of the fly, and facing strips of $\frac{3}{4}$ " material should be so placed that one, 6 inches wide, rests on the ground, and the second, 4 inches wide, is flush with the tops of the posts. A third 4-inch strip can then be nailed on so that one width of 4-foot netting will reach from it to the bottom facing strip, and a width of 3-foot netting will cover the remaining space between it and the top strip.

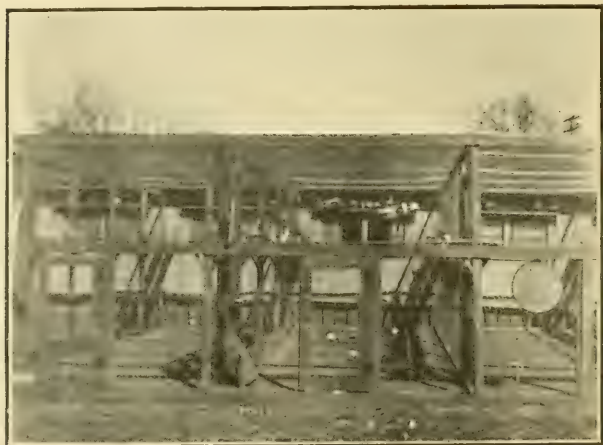
Running-boards 6 inches wide should be placed completely around the inside of the fly, resting on brackets about 4 feet from the ground, to serve as roosting places for the birds during the daytime. Roosting-

poles stretched across the fly never ought to be tolerated, as they are both inconvenient for the keeper and dangerous to the birds.

Wire-covered doors 6 feet high and 2 feet wide should be made in each partition between adjoining yards, and smaller doors may be put in the farther end of each yard to facilitate the distribution of sand and the removal of snow in the winter. All doors should be equipped with spring hinges and hooks.

OTHER NECESSITIES.—Level the ground within the fly and cover with a 4-inch layer of clean, sharp sand.

Procure a 20-inch galvanized-iron pan about 4 inches deep for each



Squab house and flying yards as viewed from south side

pen. to use as a bath-pan. If running water is conveniently at hand it would be a good plan to convey it by means of piping laid on the ground through the ends of the yards farthest from the house, making the piping pitch toward the farther end so that it can be drained out in cold weather. A faucet could then be placed in each fly and the bath-pans filled on the spot. This eliminates the hard labor of carrying water, which, in the case of a large flock of pigeons, is quite an item.

* * * * *

It is not good policy for a beginner to build an elaborate house. The outline here given briefly describes what may be termed an ideal pigeon house, for the purpose of aiding the squab raiser, who has already had some experience in that line, to build up his plant. A

beginner, who is totally unacquainted with the care of pigeons, had better utilize some existing building for a short time, or erect a temporary structure in accordance with the general features of the plan outlined, until he feels confident that he has enough experience to warrant the enlargement of his plant. Some of the most conspicuous failures have been caused by starting on too large a scale with no experience in managing a flock of pigeons nor any knowledge concerning their habits.

FEEDING

The feeding question is one of the most important features of pigeon raising, and one upon which many successful breeders seem to hold different opinions. Waiving regularity and cleanliness, which any person of ordinary intelligence and industry might maintain, the proper feeding of the stock is of utmost importance in successful pigeon raising, for it requires the exercise of good judgment as well. I do not wish to convey the idea that proper kind of stock and proper care are not of primary importance, but that to feed well the breeder must guard against two extremes—overfeeding and underfeeding. Besides, he ought to have a reasonably accurate knowledge of how to vary the proportions of the different feeds in order to meet any conditions such as arise from the season of the year, the weather and the health of the birds.

As the feed involves the principal expenditure connected with squab raising, the novice may be tempted to "economize" at the expense of his flock. He should remember, however, that economy in the shape of inferior grain or an insufficient quantity of wholesome feed affects the squabs in an extraordinary degree. When there is a lack of feed the old birds are able to fight for a share, but the helpless squab will not be properly fed. Sour, musty grain or cheap substitutes, such as brewers' grain, run down the flock and lay the birds open to disease.

Almost every pigeon raiser recommends a different method of feeding. I have tried many of the ways suggested, but these experiments have only strengthened me in the belief that to feed a clean-up feed in an open trough, located inside the pigeon house, is the only sensible and practical method. This method is approved by several squab raisers whose success I know is due to good management.

To get good results in all seasons of the year and under all conditions a variety of feed is necessary. Pigeons in their original, free state were able to select such food as their appetites dictated, and they ought to be able to do the same within reason when confined.

VARIETIES OF FEED.—The feed should be kept in a dry place, well protected against rats and mice. The most economical plan is to

build a long bin about 3 feet high and 2 feet wide divided into sections to hold the different kinds of grain.

Cracked corn, red wheat, Kaffir corn and Canada peas are the staple feeds. Cracked corn fattens the squabs and gives them the much-prized yellow skin, though, fed in excess, it overheats the blood, especially in summer, and is frequently the cause of canker, an infective disease almost impossible of cure. White wheat should never be fed to



Interior of squab house, showing passage-way

pigeons as it causes bowel trouble. New corn and wheat not properly cured also have a similar effect. It is advisable not to feed either of these until December if old grain can be procured. Kaffir corn is conducive to white squabs, while wheat tends to produce an opposite result. Canada peas are a very important food and are greatly prized by the birds. They are good muscle makers and strength producers.

German millet, silver-gray buckwheat, hempseed and rice are extra feeds to be given at regular intervals, or when circumstances require

their use. Hempseed and millet are given as tonics and especially to aid the birds to shed their feathers during the moulting season. Buckwheat may be fed with good results when a change is desired, if the birds will eat it. It is similar in effect to corn and Kaffir corn, but is usually dear and hard to procure. Rice is very effective in correcting looseness of the bowels.

TIME OF FEEDING.—The birds should be fed twice a day and it is very important that the time mentioned should be strictly adhered to. In winter they should be fed at about 7.30 A.M. and 3 P.M.; in summer, about 7 A.M. and 4 P.M. These afternoon hours are selected so that the birds have ample time to feed their young before twilight.

METHOD OF FEEDING.—Always feed indoors, using a wooden trough placed in the middle of the coop. For fifty pairs of birds this trough ought to be about 4 feet long, 1 foot wide and 1½ inches deep.

The best plan to pursue in feeding is to begin at the end of the squab house farthest from the exit door and pass quietly down the passageway, throwing down only one-half the full portion to each pen of birds. About an hour after, go through the house again and feed whatever more seems to be required, as indicated by the appearance of the feed troughs. A two-quart grocer's scoop is essential for convenience in feeding.

RATIONS.—The morning mixture in winter should consist of equal parts of cracked corn, red wheat and Canada peas. The afternoon feed in winter should be composed of equal portions of cracked corn, Kaffir corn and Canada peas.

As spring advances, the amount of corn in both mixtures should be decreased gradually (of course the quantities of the other grain must be increased to keep the total amount constant), until the proportion of corn has been reduced to about one-third as much as of any one of the other grains. Around the first of October begin to increase the proportion of corn again until the maximum—equal portions—has been reached about December 1st.

The quantity of feed required for fifty pairs of pigeons in breeding condition, with the average number of squabs to care for, is about four quarts at each feeding. With a large number of squabs in the nests, it may be found necessary to give them as much as five quarts at a feeding.

SPECIAL FEEDS.—Twice a week, say on Wednesday and Sunday, add a one-fourth portion of German millet to the afternoon ration, and on Monday and Friday feed hempseed in the same way. In the moulting season, which lasts from August to November, millet and hempseed should be fed in larger quantities, as they both aid the birds to moult and act as tonics. Excessive feeding of millet is marked by a frothy, yellow discharge from the bowels and is especially noticeable

with the squabs. Too much hemp has a tendency to cause vertigo. When these grains are being fed in appreciable quantities the birds should be watched carefully for any bad effects, and the portions regulated accordingly.

The reader must remember that the foregoing are only general principles to be amended more or less by the breeder's good judgment and common sense. It would be impossible to lay down a law for feeding for every specific case which might occur.

FRESH WATER.—The two-gallon drinking fountain previously mentioned should be filled with fresh water every morning before feeding. In cold weather this quantity of water is generally sufficient to last a flock of one hundred birds all day, but in summer the fountains should always be refilled before the afternoon feeding. They should be removed when the birds begin to go to roost for the night, and thoroughly swabbed out and stood aside to drain dry until the next morning. The fountains should be disinfected once a month, and more often if they are so constructed that they cannot be opened. For this purpose use a strong solution of any good disinfectant.

SALT, ETC.—Salt, in some form, is absolutely necessary to the health of the birds. The best way to feed it clear is to keep a dish of ordinary table salt before them at all times. The use of the lump salt should be avoided as it becomes filthy and melts into a dirty brine, which the birds will drink rather than try to break off pieces from the lump. As a great many pigeons like to gorge themselves on loose salt, I advise the use of Foust's Health Grit, a medicated grit which contains some salt. If a little ordinary salt is mixed with the grit no other form of salt is required and this gorging is prevented.

A small box should also be kept in each pen to hold charcoal, ground oyster-shells and grit. When buying any of these take care to procure a size suitable for pigeons.

GROWTH OF SQUABS

Almost invariably a pair of pigeons have two eggs at a setting. I have never positively known a hen to lay more than this number at one setting, although three and even four eggs may sometimes be found together in the same nest. This merely indicates, however, that a strange pair have occupied the same nest either by accident or coincidence in choosing their homes. This can easily happen in the absence of the true owners, for the hen rarely sits on the first egg steadily until the second one is laid. If more than two eggs are found in one nest, it is advisable to leave them there until they hatch, provided that all the eggs are known to have been laid within several days

of each other; but if an egg is deposited in a nest when those already laid are a week old, it should be removed to a nest containing one or more eggs of the same date.

Both the parent birds take turns sitting on the eggs, the cock staying on the nest from about 10 A.M. to 4 P.M., when the hen goes on and covers the eggs until the next forenoon. This uniformity is often of great aid in determining the sex of a mated bird.

On the nineteenth day after the laying of the first egg, or seventeen days after the laying of the second, one or both squabs are usually hatched. It is safe to assume, although not always true, that the first



View of nests, showing eggs and squabs in various stages

egg laid, and therefore the first to hatch, contains a male squab. It is commonly believed that each setting of eggs produces a male and a female.

For the first five days after hatching, the squabs are fed with pigeon milk, a fluid which the parent birds pump from their crops into the youngsters' throats. This gradually thickens until at the end of eight or nine days the squabs are receiving the whole grain just as the old birds pick it up. At the age of three weeks, the squabs are almost completely covered with half-grown feathers. When four weeks of age they are completely feathered and are preparing to leave the nest. At this age, if bred from Homer stock, they are most suitable for market.

LIGHT-WEIGHT SQUABS.—Scrawny, light-weight squabs may be produced by a number of different causes; the most common are inbred or mongrel stock, ill-fed birds and disease. If the squabs do not seem to be well-fed, while the old birds are large and healthy, a judicious regulation of the feed will accomplish the desired result. But if the trouble can be traced to any other of the above-mentioned causes the quickest remedy is to strike directly at the root of the evil. Get rid of the inferior stock or, in the case of a dangerous disease, use the hatchet.

TRANSFERRING SQUABS.—In the best regulated lofts, among the healthiest flock of birds, a puny squab will frequently be found, perhaps in the same nest with a plump, healthy one. This is most liable to happen in the moulting season. If such a case is noticed before the squab in question is three weeks old, simply transfer the puny youngster to another nest containing one squab of the same age, whose parents are good feeders. In this way its life may not only be saved, but it may be transformed into a squab equal to, and often better than, the average.

If, from any cause, both squabs in a nest die while still in the "pigeon-milk" stage, or both eggs of a setting are destroyed shortly before they are due to hatch, give the parent birds a youngster from another nest in order to give them an opportunity to feed off the milk. Neglect to do this will often cause the milk to sour in the crops of the parents and may ruin them for breeding purposes for some time.

PREPARING SQUABS FOR MARKET

The standard size of dressed squabs is eight pounds to the dozen. Those raised from Homer stock are usually ready to market four weeks, or slightly less, from the time they are hatched. Dragoon squabs require almost five weeks to reach this stage.

Care should be taken, when collecting the squabs previous to killing, neither to take immature squabs nor to overlook any that are preparing to leave the nest. The former will generally be light-weights as their flesh is soft and flabby, and not well developed. Dressing such squabs will be difficult also, on account of the number of "pin-feathers" which cover them. On the other hand, the Homer squab, five weeks old, when dressed for market has a decided "pigeon" look. The skin has become coarse, the flesh hardened, and the bones sharp. Squabs having this appearance are rated as "pigeons" and command a comparatively small price. A little practice will enable the breeder to go through the lofts and choose the squabs for killing simply by noticing whether they are sufficiently developed and feathered.

PRELIMINARIES.—Whoever makes a business of squab raising should have a regular killing day and shipping day each week. The best time to take out the squabs is either late in the afternoon on the day preceeding, after the squabs have been fed, or on the morning of the killing day before the birds have been fed. This method insures empty crops in the dressed squabs, a very important detail, for full crops detract from the appearance of the shipment as well as from its market value. If it should be found necessary to kill a squab whose crop is full, remove the grain before cooling the squab by inserting a knife blade into the crop and pressing out the feed.

As the squabs are collected they should be put into a basket or small crate and taken to the killing room, where they should be placed in compartments, each having a capacity of only fifteen or twenty birds. This arrangement prevents crowding and suffocation of the squabs in hot weather, which is liable to occur if they are all placed together in one large cage.

KILLING.—For this purpose use an ordinary killing-knife or a long, thin-bladed penknife. Grasp the squab firmly in the left hand, holding the head in position with the thumb and the first finger. Insert the knife into the mouth, cut the jugular vein well down in the throat, then draw the knife upward, cutting into the brain. Suspend the squab from a noose, head downward, taking care to secure the ends of the wings as well as the feet, and let it bleed freely.

DRESSING.—The squabs should be plucked while warm as the feathers can be removed more easily then than when they have become cool. For this reason, only as many squabs should be killed ahead as can be plucked while they are warm. First pull out all the quills from the tail and wings. Then, beginning with the neck and breast, remove all the body feathers, taking care not to tear the skin. Pluck the wings clean and lastly remove whatever pin-feathers and fluff there may be left. It is customary, when dressing squabs, to leave a margin of about an inch of feathers around the head of each squab.

With practice, a picker may become so expert as to pluck clean twelve squabs in an hour. The usual number which a person can pluck, however, is about ten an hour.

The soft body-feathers can be made a source of considerable revenue if they are kept separate from the quills. They are often used as a substitute for chicken or geese feathers in the making of cushions and pillows.

COOLING.—As soon as each squab is plucked it should be dropped into a tub of moderately cold water (not ice-cold) to drive out the animal heat slowly. After all the squabs have been plucked, carefully wash their mouths and feet clean of all blood and dirt and fold their wings across their backs. Put them into a tub of ice-cold water for a short time to become thoroughly chilled; then lay them out on a table or hang them on a rack to drain.

SORTING.—Although eight-pound squabs are the average size, seven- and nine-pound squabs are quite common, and some as heavy as ten or eleven pounds to the dozen are often raised. If the squabs are to be shipped to a dealer who prefers to have the different sizes separated, first sort them, then weigh them carefully by the dozen. They may be packed side by side or tied up in bunches of six for shipping. Even if the consignee does not state that they are to be sorted, it is always advisable to do so, as it secures the producer against careless or dishonest weighing.

SHIPPING.—For shipment to a distant market by express a strong wooden box should be used. Place a thin layer of excelsior on the bottom of the box and, on top of that, a layer of coarse, cracked ice. Above this pack in alternate layers of squabs and ice, finishing with a generous covering of ice. Place over this a sheet of heavy wrapping paper and nail on the cover securely. Every package of squabs sent by express should bear the express company's "rush" tag. It is safe to ship squabs without ice only in very cold weather.

If the breeder is assured of a regular weekly supply he will find it to his advantage to cultivate private trade, especially that of hotels and retail poultry and meat markets. In this way he will get a slightly better price for his squabs than he could by selling direct to commission dealers or wholesale houses,

RAISING SQUABS FOR BREEDERS

SELECTION.—In the selection of squabs to be raised for breeding purposes, only the strongest ones from the healthiest and best breeders should be considered. However, as each pair of squabs are almost sure to be a male and a female, and as the larger is almost invariably the male, it is not good policy to save only the larger bird in each nest. It is more advisable to save a small majority of hens, since their mortality during the first moult is higher than that of the cocks.

The best time to keep youngsters is from the latter part of March until the end of June. They then escape severe cold weather and are not subjected to the worst heat of summer until they have passed the critical stage. Besides, they will be ready to mate in time to breed for the winter trade and high prices.

BANDING.—The youngsters selected should be banded before they leave the nest, or when between three and four weeks old. For this purpose use open numbered bands of German silver. These can be purchased at poultry supply houses at \$1.50 a hundred. A record of these bandings should be entered temporarily in a small note book so that, when the birds begin to mate, nest-mates can be distinguished

and inbreeding prevented. The following form of keeping this record is advised.

251
252
253
254

This signifies that numbers 252 and 253 are nest-mates and should not be permitted to mate together; and that 251 and 254 are each odd birds without nest-mates.

If possible, leave the youngsters under the care of the old birds until they are able to feed themselves and have learned to fly about inside the coop, which they usually begin to do when about five weeks of age. It is even better practice to let them remain in the breeding pen until they are able to fly outside. The principal objection to this is, however, that, among a large flock of birds, these youngsters are liable to be overlooked and allowed to grow up in the breeding pen, although they can easily be distinguished from the older birds by their length of bill and the absence of the white wattle.

When they have reached the age of five or six weeks, as is desired, remove the youngsters from the breeding loft and place them in a pen reserved for young birds only, which should be fitted up with nest-boxes in a similar manner to the regular breeding pen, so that the young birds can remain in these quarters until they have mated. As the birds are being transferred, pull out all their tail feathers, for they often have difficulty in shedding these in the first moult. This moult occurs when the youngsters are about two months old, and inability to moult at a time when the bird is naturally in a weakened condition is often fatal. This simple remedy has also frequently been known to save the life of a matured bird, as the tail feathers are a heavy drag for a sick bird to carry.

GENERAL CARE.—Never allow the youngsters to remain outside at night. For the first few nights in the new quarters it may be found necessary to put some of them inside, but they soon learn to go in at sundown after they have become acquainted with the new surroundings.

Always confine them indoors up to the age of three months until they have finished their morning feed, and do not let them out at all in damp or rainy weather.

See that the drinking water is fresh and pure at all times and once a week place a piece of stone lime as large as a walnut in the drinking water. Tincture of gentian (see tonics) should be given as a tonic in the drinking water once a week, in the quantity of one tablespoonful to a gallon of water.

Feed the youngsters the same rations as the rest of the birds receive, with the exception that not so large a portion of Canada peas is required. They do not seem to relish these as much as the breeding birds do.

MATING

Just as properly mated birds are necessary to the beginner's success, so is an accurate knowledge of how to mate pigeons indispensable to the pigeon raiser. Without exception, the proper mating of the birds is the most important detail of the business, the value of which cannot be too strongly emphasized; for it is safe to say that either neglect or ignorance of this fundamental principle has been the cause of four-fifths of the failures, all of which have had a tendency to bring the business into bad repute.

It is important that all unmated birds be kept in a coop entirely separate from the breeding stock. This coop should be furnished with nest-boxes and all exit holes should be equipped with slides that can be operated by cords from without the pen.

The first signs of a pair of birds mating are "driving," and "cuddling" in a nest. In the former case the cock always drives the hen; in the latter the cock coaxes the hen to the nest. Young birds may be expected to show these signs any time after they have reached the age of five months. Although none of these maneuvers is to be taken seriously the experienced breeder will keep an eye on the pair and watch for developments. If they are observed to drive continuously, the two birds should be caught and their numbers noted. This may be accomplished in several ways. If there are two persons at hand, each chooses a bird and, while one person pursues his with a long-handled net, the other watches the second bird and points it out after the first has been caught. When one person is working alone, he should catch one bird and mark it conspicuously with a colored ribbon on its leg. Then, when the two begin to drive again, he can catch the second bird, while the marked bird can easily be secured afterward.

After their numbers have been noted the mating birds should be left undisturbed until their eggs have been laid. They may then be caught again and their numbers verified. But if the birds are nest-mates, which may be ascertained if a record of the young birds has been kept as advised, separate them or sell one.

Before the pair are placed in the permanent breeding pen, they should be allowed to raise their first pair of squabs, thus removing any possible doubt as to whether they are mated. It is well to keep in mind that, in practical squab raising, a pair of pigeons cannot be considered a mated pair until they have produced squabs.

TELLING SEX.—There is no infallible method of ascertaining the sex of each one of a flock of birds by sight. The only positive method is by observation. The cock of a pair always "drives" the hen. The male bird occupies the nest during the daytime from about 10 A.M. to 4 P.M., while the female covers the nest during the night and early morning. In appearance the head and neck of the cock are more round and full than those of the hen, and the cock is more likely to strut around and play the bully.

KEEPING THE RECORD.—As the mated pairs are transferred to the breeding quarters enter their numbers, color and sex in a permanent record book kept for each pen separately as follows:

cock	251—blue-barred
hen	253—red-checked
cock	252—blue-checked
hen	254—black

The value of this record will be demonstrated to the pigeon raiser in many ways. For example, if one bird of a pair should die, its mate must be removed at once. In this case all he has to do is to catch the birds which correspond to the description given in the record of the one he wants, until he secures the right one. It is a good plan, when entering the colors, to make a memorandum of any unusual markings. This record insures the squab raiser against any trouble caused by having an unknown odd bird in the breeding pen, and no flock of pigeons can be kept in proper working condition without it. A single, unmated cock or hen has been known to go from one nest to another, fighting with every bird it meets, without regard for eggs or squabs, and completely upsetting a pen of steady breeders.

GENERAL MANAGEMENT

Healthy, mated birds, well-built houses and wholesome feed do not always insure success. The welfare of a flock of pigeons may often depend upon the observance of details which may seem insignificant or unnecessary to the uninitiated. The pigeon raiser should not be satisfied with the knowledge that he has started in the right way and depend on that for success; he should endeavor to keep his flock in the best condition and up to the highest standard.

CLEANING.—It is important that the lofts be cleaned regularly once every week or ten days. In a large plant, this must necessarily be made a part of each day's work. Some pigeon raisers have been known to advocate cleaning once every season, making the objection that greater frequency disturbs the birds. Such a practice would be a decided menace to the health of the flock.

Enter the pen quietly, and, with as little uproar as possible, remove the nest floors one at a time and scrape off the droppings with a flat trowel. Nest-boxes containing either eggs or very young squabs need not be cleaned, but should be left until the squabs are about half-grown. Scrape all refuse onto the floor and disinfect any damp or foul-smelling nest by scattering in it about a spoonful of air-slacked lime, carbolated by the addition of crude carbolic acid in the quantity of about a cupful to a peck of lime. After scraping the floor thoroughly with a spade and removing the refuse, sprinkle about a pint of carbo-

lated lime over the floor, particularly in the corners or where the floor is damp, and spread evenly over it a bucket of clean, dry sand.

Although at first the birds may be rather timid at the approach of the cleaner, they will soon become accustomed to his presence if he proceeds slowly and deliberately and gives them no cause to become frightened. I have some breeders that will sit close on their nests even while the "nappies" are being removed so that the nest-boxes can be cleaned.

In cold weather, care should be taken not to remain in one pen long enough for any eggs or squabs which may be left uncovered to become chilled. When the temperature is much below freezing point it is not safe to stay in one pen longer than fifteen minutes at a time. Under these conditions it is a good plan to clean two pens at once, moving from one to the other alternately.

The flies should be cleaned out once every three months. Rake the droppings and feathers from the sand with a light, fine-toothed rake and scatter about two quarts of carbolated lime in the corners and under the running-boards. Work in the lime well with a rake, loosening the sand at the same time. About twice a year—in the early spring and again in the fall—a layer of clean sand should be added.

WHITEWASHING.—When a new pen is opened up for occupation it should receive two thorough coatings of whitewash, and every year or two thereafter another coat should be applied if a convenient opportunity occurs. The free use of dry, carbolated lime when cleaning obviates the necessity of very frequent whitewashing.

In preparing whitewash, the lime should be slacked several weeks before it is to be used. To do this, place several lumps of unslacked lime in a tub and pour over them a little cold water, which will break up the lime into small pieces. Every few days add a little water until the lime has slacked to the consistency of a thick paste. This forms the foundation of the whitewash.

The following formula for preparing whitewash which appeared in "The Feather" of August, 1907, will be used with good results:

"To each peck of lime, after mixed to the proper consistency, glue water is added, made as follows: One pound of good quality ground glue thoroughly dissolved and mixed into the amount of wash; add one pint of rock salt to each peck of lime."

Apply with a small whitewash brush, taking care to fill all cracks and crevices.

BATHING.—The birds take great delight in bathing in summer and in winter they will break a thin coating of ice in order to get into the water. In warm weather they should be allowed to bathe two or three times a week, but in winter the bath should be restricted to warm, sunny weather, so that the birds have an opportunity to become thoroughly dry during the warmest part of the day. The bath should be given about ten o'clock in the morning. If the water becomes

dirty and the pigeons still evince a desire to bathe, refill the pan with fresh water. Always empty the pans before the afternoon feeding, so that the birds have little cause to drink from the foul water. Never use the same pan for both drinking and bathing purposes.

The installing of the pipe system as described in another part of this book is strongly advised in a large plant where running water is at hand; it will pay for itself in a short time.

NESTING MATERIAL.—A plentiful supply of fine, short tobacco stems should be kept in each pen for the birds to use for nesting material. The use of these is a positive safeguard against vermin, both on the parent birds as well as the squabs. When fine stems can be obtained no other material, such as hay or straw, need be used to make a soft nest.

DISEASES AND REMEDIES

With due regard to proper care and sanitary surroundings, there should be little trouble from sickness and disease. As a rule a seriously sick or diseased pigeon should be killed; it does not pay to attempt a temporary cure nor to risk contagion. When any sickness or disease manifests itself, seek out the cause, and that being removed the trouble will disappear. It is good policy on general principles to use one certain drinking-fountain continually for each pen of birds, to prevent the spreading of any contagious disease before it is discovered.

CANKER.—This is a dangerous infective disease which, when once acquired, often lies dormant in the system, only to appear after long intervals when the bird is subjected to a new diet or is in a weakened condition. Canker usually appears in the ear or in the mouth. Its presence in the latter is indicated by a discharge of yellow, cheesy matter from the mouth, which is known as soft canker, or by a hard yellow lump in the throat. A yellow diarrhea usually accompanies either of these symptoms.

Filthy surroundings, foul water, unwholesome feed and draughts are the principal causes, but, as it sometimes occurs in flocks that have the best of care, it is claimed that the disease is hereditary. When a squab or old bird has become affected, remove it from the pen and kill it, for no superficial treatment will suffice, since the root is generally located deep down in the system.

As a preventive keep salt before the birds at all times. A small piece of alum, or ten drops of a 50% mixture of glycerine and refined carbolic acid in the drinking water once a week, when the disease is prevalent in a flock, is a good remedy.

To guard against this disease, be careful where you procure your stock, give only sound feed and pure water and avoid draughts.

VERTIGO.—A bird afflicted with vertigo twists its head over its shoulder and walks in a dizzy fashion, often falling. It is a disease which is not thoroughly understood but its appearance can almost always be traced to an overfeed of hempseed. A bird, once affected, may live for years but a positive cure is unknown.

GOING LIGHT.—This disease is a form of consumption among pigeons. A bird affected mopes and is unable to fly. If caught its flesh will be found to be wasted away so that it is a mere skeleton, and diarrhea is always noticeable. Although the disease is not contagious, remove the bird from the pen so that it will be left undisturbed. Pull out the tail quills, inject a dropperful of sweet-fern tea or gentian (see tonics) in its mouth and place it out of doors in the sunshine. If the bird does not improve after a week of isolation, kill it. Another good remedy is to turn the bird loose on top of the fly after several days of the above treatment and feed it regularly.

The most common causes are inability to moult, coupled with the run-down condition of the bird and, in the case of a hen, too hard driving by the cock bird.

ROUP.—Roup is manifested by a slimy, yellow discharge from the nostrils and a foul breath. It is contagious and requires immediate care. Wash the nostrils and inject four or five drops of camphorated oil into each of them, as well as several drops into the mouth. Repeat this operation if necessary until a cure is effected. The cause is usually a neglected cold.

WING TROUBLES.—Sometimes a bird may strike its wing accidentally in passing through the exit holes, and raise a lump on one of its wing joints. This lump is not dangerous but it spoils the appearance of the bird. An effective remedy is to paint the part affected with tincture of iodine, and if the wing droops pull out the larger quills.

CHOLERA.—This is the most dangerous disease to which pigeons are subject. Having once taken hold of a flock of birds, it runs through it with fatal rapidity. The bird affected mopes and when it is examined its crop will usually be found to be puffed out with water. A copious green diarrhea is always a symptom. It is advisable to kill the bird at once, as this disease is too terrible to risk any possible chance of contagion.

Clean out the pen and disinfect thoroughly any part occupied by the sick bird.

If the whole flock is threatened, add ten drops of carbolic acid to a two-gallon drinking-fountain of water for two mornings consecutively. Follow this treatment by giving fern tea in the drinking water every second day for a week.

Since the cause of cholera can always be traced to filth, unsound grain and foul water, the industrious and intelligent pigeon raiser need never have cause to fight this disease.

TONICS

TINCTURE OF IRON.—As a general tonic muriate tincture of iron is very effectual, and it is also useful in cases of diarrhea. Give it when required in the quantity of 5 drops to a gallon of water.

FERN TEA.—This is a very simple and effectual remedy for looseness of the bowels. A teacupful in a two-gallon fountain of water is the usual dose. The tea is prepared by boiling about a handful of dried sweet-fern leaves in two gallons of water, letting it boil down one-half. The tea may then be used immediately or put aside in bottles and kept in a cool place. Sweet fern is botanically known as *Myrica asplenifolia*.

GENTIAN.—As a general tonic to be given once a week during the moulting season—from August to November—or when otherwise required, gentian is unequalled. Procure what is known as the compound tincture of gentian and give a tablespoonful to a gallon of water.

NUX VOMICA.—This makes a good tonic for the birds at any time under any conditions. Procure the tincture of nux vomica and add it to the drinking water in the portion of two teaspoonfuls to a gallon of water. If required, it may be given as frequently as once a week without any harmful effects.

* * * * *

It is not advisable to dose the birds with medicines for any minor ailment which can often be remedied by simply removing the cause. The use of tonics should be confined principally to the raising of squabs for breeding purposes, to keeping the birds in condition during the moulting season, and to the cure of any sickness which might appear.

SUMMARY

As previously mentioned, my observation has shown that the tendency of the beginner is to acquire his stock with as little expenditure as possible. On general principles his method is commendable, but he makes the serious mistake of believing that this is cheaper in the long run than to spend a little more and get his money's worth. He prefers quantity to quality. He should remember that birds which are sold for a low price are sold so because they are not worth any more.

The ordinary common pigeon which is found in so many amateur's lofts should not be confounded with the Homer. It does not 'earn its salt' as a squab breeder.

If possible, get the advice and assistance of some experienced person when purchasing stock. Get only mated birds to start with, get them from a breeder of whose business integrity you are reasonably assured, and keep them in a pen entirely separate from any unmated birds. If a bird dies in the breeding pen, catch its mate and place it in another coop. The experienced pigeon raiser keeps a few odd birds to mate with those whose mates have died.

Only sound, wholesome grain should be fed liberally, but not wastefully, for grain left on the floors to sour is a menace to the health of the birds.

The coops should be cleaned regularly and the sand in the flying-yards kept fresh. The use of sand is the only preventative of the growth of that green mold which has often been known to cause cholera. Any considerable amount of snow should be removed as quickly as possible. Although the birds like to eat it, it causes a diarrhea which scours them.

Pigeons should not be expected to breed steadily through the moulting season, though they do not fall off as noticeably as do chickens. Just previous to, and during, this period they should receive very careful attention. Plenty of strengthening feed—such as Canada peas—should be given in the rations, and millet and hemp should be fed as tonics in small quantities more often than during the rest of the year.

The drinking fountains should be kept sweet and clean, and free from slime by the regular use of a strong disinfectant.

Dark squabs command only a small price in high class trade. They are generally the result of common stock, overfeed of wheat, or sometimes the imperfect bleeding of the squabs when killed. Black-billed and black-legged breeders often have dark skins and through dark squabs.

With careful and systematic attention, a flock of pigeons ought never be afflicted with vermin or any dangerous disease. One advantage which squab raising has over any similar industry is that a flock of birds recover very rapidly from any trouble as soon as the cause of it has been removed.

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